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10/020,313

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Kazuhisa Fujimoto

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05/02/2006

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EXAMINER

LEROUX, ETIENNE PIERRE

ART UNIT

PAPER NUMBER

2161

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/020,313	Applicant(s) FUJIMOTO, KAZUHISA	
	Examiner Etienne P LeRoux	Art Unit 2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 35-48 and 56-65 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 35-48 and 56-65 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Status

Claims 35-48 and 56-65 are pending; claims 1-34 and 49-55 having been cancelled.

Claims 35-48 and 56-65 are rejected as detailed below.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 35-48 and 56-65 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 35 recites:

a physical input/output port to be coupled to the IP network

the physical input/output port accessible by a block I/O request having a first port number

the physical input/output port accessible by a file I/O request having a second port
number

A person skilled in the art would not be able to make and use the present invention without undue experimentation because the specification does not include the following:

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- (1) The specification does not disclose a single physical input/output port which is coupled to the Internet. Figures 1, 4, 5, 7 and 8 disclose eight(8) ports and Figures 6 and 13 disclose four(4) ports.
- (2) The specification does not disclose how to assign two different port numbers to a single physical input/output port.
- (3) The specification does not disclose the difference between file-based I/O blocks and block-based I/O blocks. It is particularly unclear from the specification what comprises blocks which are not associated with file-based I/O blocks. Are these block-based I/O blocks single stand-alone blocks since they appear not to be associated with a larger entity such as a file, document or application program?
- (4) The specification does not disclose how Internet traffic is divided into two categories, i.e., block-based and file-based. Furthermore, examiner maintains that files are transmitted in blocks (packets) over the Internet and thus are essentially block-based. Therefore, the difference, if indeed any, between file-based I/O blocks and block-based I/O blocks is not clear from the specification.

Claims 42 and 56 include language similar to claim 35 and are rejected on the same basis as claim 35.

Claims 36-41, 43-48, 57-65 are rejected for being dependent from a rejected base claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 35-48 and 56-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No 6,748,448 issued to Barrera et al (hereafter Barrera), in view of US Pat No 6,002,669 issued to White (hereafter White) and further in view of US Pat No 5,991,542 issued to Han et al (hereafter Han), as best examiner is able to ascertain.

Claims 35, 42, 49 and 56:

Barrera discloses:

- a physical input/output unit coupled to the IP network [Fig 3, 108, col 8, lines 30-40]
- a control unit coupled to the physical input/output port [Fig 3, 102, col 8, lines 30-40]
- a plurality of disk drives coupled to the control unit [Fig 2, 64, col 6, lines 40-53]

Barrera discloses the essential elements of the claimed invention as noted above but does not disclose the physical input/output port being accessible by a block I/O request having a first port number via the IP network and a file I/O request having a second port number via the IP network. White discloses the CyberNet Protocol supports a block transfer mode suitable for transmitting binary files and a block transfer mode for single packets [White, col 11, lines 53-65]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Barrera to include the physical input/output port being accessible by a block I/O request having a first port number via the IP network and a file I/O request having a second port number via the IP network based on the teachings of White for the purpose of providing a means for transferring single packets and a means for transferring multiple packets [White, col 11, lines 53-65].

The combination of Barrera and White discloses the essential elements of the claimed invention as noted above but does not disclose wherein the plurality of disk drives are configured into a plurality of volumes, of which a first volume is assigned to store data related to the block I/O request and a second volume is assigned to store data related to the file I/O request. Han discloses partitioning a storage volume into block volumes and file contents volumes [Fig 2]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Barrera and White to include wherein the plurality of disk drives are configured into a plurality of volumes, of which a first volume is assigned to store data related to the block I/O request and a second volume is assigned to store data related to the file I/O request based upon the teachings of Han for the purpose of simplifying access and thus reducing access time.

Furthermore, the combination of Barrera, White and Han discloses when an I/O request received at the control unit via the physical input/output port is the block I/O request including the first port number, the control unit performs a first operation, corresponding to the first port number for storing data in the first volume [White, col 11, lines 53-65]

Furthermore, the combination of Barrera, White and Han discloses when an I/O request received at the control unit via the physical input/output port is the file I/O request including the second port number, the control unit performs a second operation, corresponding to the second port number for storing data in the second volume [White, col 11, lines 53-65]

Claims 36 and 43:

The combination of Barrera, White and Han discloses the elements of claims 35/42 as noted above and furthermore discloses wherein the block I/O request has an IP packet that

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includes the first port number and first information including an address in the first volume

[White, col 7, lines 25-35]

Claims 37, 44 and 58:

The combination of Barrera, White and Han discloses the elements of claim 35/42/56 as noted above and furthermore discloses wherein the file I/O request has an IP packet that includes the second port number and second information including file data [White, col 7, lines 25-35]

Claims 38, 45 and 57:

The combination of Barrera, White and Han discloses the elements of claim 35/42/56 as noted above and furthermore discloses wherein the block I/O request has a TCP packet in which the first port number is included [White, col 11, lines 50-65]

Claims 39 and 46:

The combination of Barrera, White and Han discloses the elements of claims 35 and 36 as noted above and furthermore discloses wherein the IP packet encapsulates a TCP packet in which the first port number is included [White, col 11, lines 50-65]

Claims 40 and 47:

The combination of Barrera, White and Han discloses the elements of claim 35/42 as noted above and furthermore discloses wherein the first volume and the second volume are concurrently assigned [Han, Fig 2]

Claims 41 and 48:

The combination of Barrera, White and Han discloses the elements of claims 35/42 as noted above and furthermore discloses wherein the control unit maps relationships between

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logical addresses of the volumes and physical addresses of the disk drives to which data is to stored [Han Fig 2]

Claim 59:

The combination of Barrera, White and Han discloses the elements of claim 56 as noted above and furthermore discloses wherein the control unit transforms the file data into block data for storing in the second volume [Han, Fig 2]

Claims 60-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Barrera, White and Han and further in view of Pub No 2002/0112022 issued to Kazar et al (hereafter Kazar), as best examiner is able to ascertain.

Claims 60, 62 and 64:

The combination of Barrera, White and Han discloses the elements of claim 35/42/56 as noted above but does not disclose wherein a format of file I/O related to the file I/O request is on the basis of NFS protocol, and the second operation is performed on the basis of the NFS protocol. Kazar discloses the NFS protocol [paragraph2]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify above combination of references to include wherein a format of file I/O related to the file I/O request is on the basis of NFS protocol, and the second operation is performed on the basis of the NFS protocol based on the teachings of Kazar for the purpose of complying with normal NAS file servers [Kazar, paragraph 2].

Claims 61, 63 and 65:

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The combination of Barrera, White and Han discloses the elements of claim 35/42/56 as noted above but does not disclose wherein a format of file I/O related to the file I/O request is on the basis of NFS protocol, and the second operation is performed on the basis of the SCSI protocol. Kazar discloses the SCSI protocol [paragraph2]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify above combination of references to include wherein a format of file I/O related to the file I/O request is on the basis of SCSI protocol, and the second operation is performed on the basis of the SCSI protocol based on the teachings of Kazar for the purpose of complying with normal NAS file servers [Kazar, paragraph 2].

Response to Arguments

Applicant's arguments filed 3/27/2006 have been carefully considered but are not persuasive for the reasons states below:

Applicant Argues:

Applicant includes the following in the third and fourth paragraphs of page 2: Applicants point out that the single physical input/output port corresponds to one of the four ports shown in Figs. 6 or 13. As stated in the specification, the number of components shown is not limited to the description in the specification (see paragraph [155] in corresponding U.S. Publication No. 2002/0178143).

With respect to item (2) on page 3 of the Office action, it appears that the examiner misunderstands applicant's intended meaning of port number. The present claims do not recite the assigning of different port numbers to a single physical input/output port. In the specification, the "port number" is not a number that is assigned to a single physical port and is not an identifier to specify a physical port. The "port number" is included in an I/O request or an internet protocol compliant packet and is referenced when the storage controller makes the determination as to whether the I/O request is one related to block data or file data (see paragraph [158] –[160].

Examiner Responds:

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Examiner is not persuaded. Examiner is confused. Examiner will not give patentable weight to above explanation by applicant because it does not support the claim language which states:

a physical input/output port to be coupled to the IP network

a control unit coupled to the physical input/output port

the physical input/output port being accessible by a block I/O request having a first port number via the IP network and a file I/O request having a second port number via the IP network.

Applicant fails to point to the specification for support for the above claim limitations and in particular for 1) a first port number, 2) a second port number and 3) a number for the physical port such that the physical port can be accessed by block data and 4) a number for the physical port such that the physical port can be accessed by the file data or 5) shared numbers for the physical port such that the one and only one physical port is accessed by both block data and by file data.

Applicant Argues:

Applicant states in the second paragraph of page 4 the following:

As it appears that the examiner misunderstands applicants' invention with respect to file based I/O and block based I/O, the prior art applied under this section is not relevant to the pending claims.

Examiner Responds:

Examiner is not persuaded. Examiner is confused because Han's disclosure relevant to the claimed invention is, element by element, mapped to the claim limitations in supra Office action. Furthermore, examiner notes Rule 37 CFR 1.111(b) requires

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Applicant to "distinctly and specifically point out errors" in the examiner's action. Also, arguments or conclusions of Applicant cannot take the place of evidence. *In re Cole*, 51 CCPA 919, 326F.2d 769, 140 USPQ 230 (1964).

Applicant Argues:

Applicant states the following in the second paragraph of page 4:

In particular, none of the cited art discloses a single port that receives both block and file I/O requests based on a first port number and a second port number as claimed.

Examiner Responds:

Examiner is not persuaded. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a single port that receives both block and file I/O requests based on a first port number and a second port number) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne P LeRoux whose telephone number is (571) 272-4022. The examiner can normally be reached on Monday through Friday between 8:00 am and 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on (571) 272-4146. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Etienne LeRoux

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4/28/2006

EX Lehman